

WHAT IS CLAIMED IS:

1. A remote maintenance system for maintaining an industrial equipment installed at a remote location,  
5 comprising:  
monitor means for monitoring an operating state of one or a plurality of industrial equipments; and  
management means for managing maintenance of the industrial equipment while communicating information  
10 associated with maintenance of the industrial equipment with said monitor means through the internet.
2. The system according to claim 1, wherein said management means performs centralized maintenance management of respective industrial equipments installed  
15 in a plurality of factories.
3. The system according to claim 2, wherein said plurality of factories are factories of at least one user, and said management means is arranged on a vendor side.
- 20 4. The system according to claim 1, wherein a plurality of types of industrial equipments are installed in one factory, and said management means comprises a plurality of management means respectively corresponding to the types of industrial equipments.
- 25 5. The system according to claim 4, wherein said plurality of industrial equipments are supplied by

different vendors, and said management means are arranged in the different vendors.

6. The system according to claim 1, further comprising means for supplying software of the industrial equipment or guide information associated with an operation of the equipment from said management means to the industrial equipment through the internet.

7. The system according to claim 1, wherein said monitor means detects occurrence of a trouble of the industrial equipment and notifies said management means of status information for specifying a state of the trouble, and

said management means determines a countermeasure against the trouble of the industrial equipment on the basis of the status information and informs said monitor means of response information based on the determined countermeasure.

8. The system according to claim 7, wherein said monitor means comprises maintenance means for maintaining the industrial equipment on the basis of the response information notified from said management means.

9. The system according to claim 7, wherein said management means has a database for registering the information associated with maintenance of the industrial equipment, said database registering information for identifying an industrial equipment, a

state of a trouble to occur, and a countermeasure  
against the trouble in correspondence with each other,  
and said management means looks up said database to  
determine a countermeasure against a corresponding  
5 trouble.

10. The system according to claim 9, wherein said  
management means comprises automatic updating means for  
updating said database on the basis of contents of the  
information associated with maintenance of the  
10 industrial equipment every time exchanging the  
information associated with maintenance with said  
monitor means.

11. The system according to claim 10, wherein said  
management means further comprises manual updating means  
15 for updating said database on the basis of input  
information from an operator.

12. The system according to claim 9, wherein said  
management means further comprises access permission  
means for permitting a user of the industrial equipment  
20 to access said database.

13. The system according to claim 12, wherein said  
management means further comprises communication  
security means for inhibiting a third party except the  
user of the industrial equipment from accessing said  
25 database.

14. The system according to claim 9, wherein said

monitor means comprises access means for accessing said database of said management means.

15. The system according to claim 1, wherein the industrial equipment is a semiconductor manufacturing apparatus.

16. A method of manufacturing a semiconductor device using a semiconductor manufacturing apparatus managed on the basis of said remote maintenance system of claim 1.

17. A semiconductor device manufactured by a semiconductor manufacturing apparatus managed on the basis of said remote maintenance system of claim 1.

18. A monitor apparatus arranged on an industrial equipment side to constitute a remote maintenance system for maintaining an industrial equipment installed at a remote location, comprising:

obtaining means for detecting occurrence of a trouble of one or a plurality of industrial equipments and obtaining status information representing a state of the trouble; and

communication means for notifying, through the internet, a management apparatus for performing centralized maintenance management of the industrial equipment of status information obtained by said obtaining means, and for receiving response information sent from said management apparatus through the internet in response to notification of the status information.

19. The apparatus according to claim 18, further comprising maintenance means for maintaining the industrial equipment on the basis of the response information received by said communication means from  
5 said management apparatus.

20. The apparatus according to claim 18, wherein the industrial equipment is a semiconductor manufacturing apparatus.

21. A management apparatus arranged on a vendor side to  
10 constitute a remote maintenance system for maintaining an industrial equipment installed at a remote location, comprising:

communication means for communicating, through the internet, with each monitor means of at least one  
15 factory in which a monitor apparatus is arranged to monitor an operating state of at least one industrial equipment; and

corresponding means for determining a countermeasure against a trouble on the basis of status  
20 information associated with a state of the trouble of the industrial equipment, which is received by said communication means from said monitor apparatus, and causing said communication means to notify said corresponding monitor apparatus of response information  
25 based on the determined countermeasure.

22. The apparatus according to claim 21, wherein said

management apparatus further comprises a database for registering the information associated with maintenance of the industrial equipment, said database registering information for identifying an industrial equipment, a  
5 state of a trouble to occur, and a countermeasure against the trouble in correspondence with each other, and said corresponding means looks up said database to determine a countermeasure against a corresponding trouble.

10 23. The apparatus according to claim 21, further comprising automatic updating means for updating said database on the basis of contents of the information associated with maintenance of the industrial equipment every time exchanging the information associated with  
15 maintenance with said monitor means.

24. The apparatus according to claim 22, further comprising manual updating means for updating said database on the basis of input information from an operator.

20 25. The system according to claim 21, further comprising access permission means for permitting a user of the industrial equipment to access said database..

26. The apparatus according to claim 25, further comprising communication security means for inhibiting a  
25 third party except the user of the industrial equipment from accessing said database.

27. The apparatus according to claim 21, wherein the industrial equipment is a semiconductor manufacturing apparatus.

28. A remote maintenance method of maintaining an  
5 industrial equipment installed at a remote location, comprising the steps of:

communicating, through the internet, maintenance information between a first vendor for supplying a first industrial equipment, a second vendor for supplying a  
10 second industrial equipment, a first factory in which the first and second industrial equipments are installed, and a second factory in which the first and second industrial equipments are installed;

causing the first vendor to perform centralized  
15 maintenance management of the first industrial equipments installed in the first and second factories; and

causing the second vendor to perform centralized maintenance management of the second industrial  
20 equipments installed in the first and second factories.

29. The method according to claim 28, wherein the first and second factories are factories of the same user or different users.

30. The method according to claim 29, wherein the  
25 industrial equipment is a semiconductor manufacturing apparatus.